DOCUMENT RESUME

ED 249 119 SO 015 871

AUTHOR Altschul, D. Robert
TITLE Geography's Response to "A Nation at Risk."
PUB DATE Mar 84
NOTE 17p.; Paper presented at the Annual Meeting of the Southwestern Social Science Association (62nd, Fort Worth, TX, March 23, 1984).
PUB TYPE Viewpoints (120) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Back to Basics; *Curriculum Development; Educational Change; Educational Needs; *Educational Quality; Elementary Secondary Education; Financial Support; *Futures (of Society); *Geography Instruction; Human Geography; Physical Geography; Professional Associations; Scientific Literacy; Scientific Methodology; Technological Advancement; Technological Literacy
IDENTIFIERS *Nation at Risk (A)

ABSTRACT

A geographer responds to three themes found in the U.S. National Commission on Excellence in Education report "A Nation at Risk": (1) the return to basics theme, (2) the science and technology theme, and (3) the social science theme. The report recommends the adoption of "New Basics," which, in four years of high school, would include four years of English and three years each of math, science, and social studies. There are indications that the demand for geography as a basic school subject is prevalent today. For example, many schools have already added geography courses to their curricula. The report argues that education must be reformed to meet the nation's rising technological demands. Because all geography has a scientific basis, it has an important role to play in improving scientific and technological literacy. While the report recognizes the need for improvement in the social sciences, reform in this area was given second priority, with top priority going to math and science. Geographers are responding to this neglect by monitoring the state of geographic funding, participating in task forces, and increasing collaboration among geography professional associations. (RM)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED249119

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

This document has been reproduced as received from the person or organization originating it.

X Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. Robert Altschul

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

GEOGRAPHY'S RESPONSE TO "A NATION AT RISK"

D. Robert Altschul
March 1984

SO 015 871

Paper presented at the Annual Meeting of the Southwestern Social Science Association (62nd, Fort Worth, TX, March 23, 1984).

GEOGRAPHY'S RESPONSE TO "A NATION AT RISK"

D. Robert Altschul [1]

Preface

On March 23, 1984, at the Sixty-second Annual Meeting of the Southwestern Social Science Association held in Fort Worth, Texas, a panel discussion took place on the issue, "The Social Sciences at Risk: An Interdisciplinary Response to National Education Reform." The panel was proposed, organized, and moderated by Drs. Sandra L. Quinn and Sanford Kanter of San Jacinto College South in Houston, Texas, and consisted of five panelists (including myself) from different universities and different social sciences.[2]

The panel was convened for the purpose of generating a response by "Social Science" to the report by the U.S. National Commission on Excellence in Education, A NATION AT RISK: THE IMPERATIVE FOR EDUCATIONAL REFORM (USNCEE 1983), which was assessed by the panel proposers as being highly neglectful of social science education and research (Quinn and Kanter 1983). The invited panelists were allotted about ten minutes each in which to outline and discuss their respective discipline's response to A NATION AT RISK, including pertinent developments in education reform, in research and operational funding, and in general future outlook, within their discipline and their department. Quinn and Kanter (1983) provided panelists with several suggested questions to address.

The following paper is in essence my panel presentation, but it has been modified slightly to accommodate references, clarifications, and some new materials.

The Panel Presentation

Introduction

The central question we panelists were asked to address is: "How has your discipline responded to the publication of A NATION AT RISK ?" (Quinn and Kanter 1983). In the next ten minutes or so I shall try to summarize Geography's response to questions and concerns raised by the "Risk Report."[3] My assessment of Geography's response is based mainly on an inventory I made of recent issues of the publications of the two major associations which represent and monitor my profession: the National Council for Geographic Education (NCGE), which was organized in 1914, and publishes the JOURNAL OF GEOGRAPHY and the NCGE PERSPECTIVE (a newsletter); and the Association of American Geographers (AAG), which was founded in 1904, and publishes the ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS, THE PROFESSIONAL GEOGRAPHER, and the AAG NEWSLETTER.

A brief comment about the "Risk Report" is called for here, because it is the focus of this panel, and because I shall be making periodic reference to it in my discussion. The National Commission on Excellence in Education was created by Secretary of Education T.H. Bell in 1981, and directed to "examine the quality of education in the United States...." (USNCEE 1983, 1). The Commission was chartered to review the social and educational changes of the last 25 years that have brought American education to its present state, and to "pay particular attention to teenage youth"; the Commission did so by focusing on high schools (USNCEE 1983, 2). American colleges and universities were discerned primarily as important influences on the quality of precollege education and its reform through the setting of admission requirements, and

the Commission was instructed to study "the relationship between college admissions requirements and student achievement in high school" (USNCEE 1983, 2). The tenor of the Commission's report is that American superiority in commerce, industry, science, and technology is being eroded, that there exists a "rising tide of mediocrity" in many areas of society, and that student achievement--especially in science and mathematics, but also in reading and writing--has declined while the demands of our technological society have risen (USNCEE 1983, 5-10).

Geography's Response

My inventory of the previously mentioned publications did not reveal any specific references to the "Risk Report." However, the issues and recommendations addressed in the Report have been of enduring interest and concern to the discipline. Geographic education in primary and secondary school levels has been a longstanding concern to the geographic profession in general, but especially to the NCGE, which traditionally has monitored and promoted geography in precollege education, and has worried about the frequent "disappearance" of the subject in a melange called "social studies." In addition, the NCGE has been the agency which regularly has fostered communication--through publications, annual meetings, and awards programs for teachers--between teachers and researchers at all levels of educational institutions.[4]

Teaching and research in geography at colleges and universities have been traditionally the special concerns of the AAG, and expression of these concerns also is not a recent phenomenon; a survey only of AAG presidential addresses beginning in 1904 illustrates well the historic interest in these matters, and also reveals the long tradition of in-house debate over philosophical

and methodological issues in teaching and research. The most recent such deliberations, roughly contemporaneous with the appearance of the "Risk Report," have been fueled by budget cuts; by infrequent but widely publicized terminations of departments; by changing priorities in research funding; and by a growing national demand for education reform.

Commentaries in the publications of both the NCGE and the AAG bear the evidence of a heightened discussion and debate in recent months about "geography," and its role and state in education (Natoli 1984);[5] "opinions" and other short papers, proclaiming "what is right" and "what is not right" with the discipline, are in abundance (Boehm 1984; de Souza 1984; Golledge 1983; Gritzner 1982; Guelke 1983; James 1983; Morrill 1983).[6]

In order to assess more specifically Geography's response to the observations and findings in the "Risk Report," I shall address three themes which seemed to me basic to the Report's conclusions.

(i) The "Return to Basics" Theme.

The "Risk Report" recommends the adoption of "New Basics," which, in four years of high school, would include four years of English and three years each of mathematics, science, and social studies (USNCEE 1983, 24).[7] This is representative of the "return to basics" cry that has called Americans' attention to the need for national reform in elementary and secondary education. Geographers see the advocacy of "basics" as an important opportunity for an increasing role in education. There is ample historic precedent of Geography as a basic subject in primary and secondary schools, as well as in colleges and universities, not only in the United States, but in many countries that have a western-European education tradition (Graves 1982; Boardman 1983). There are a number of indications that demand for geography as a basic school subject is widespread in this country, and is on the rise:

(a) One such indication is provided by the "Risk Report" itself, which mentions Geography at least three times in discussions of deficiencies in American education today. The Report declares that geography teaching needs improvement; that high school geography, although offered, was completed by only 16 percent of students in a recent sample of high school graduates; and that American students spend inadequate amounts of school time taking geography and certain science courses, whereas in "many other industrialized nations" these subjects are required of all students beginning with the sixth grade (USNCEE 1983, 12, 18-20).

(b) Another indication of demand for geographic education is the sometimes widespread public response which is generated by periodic media attention to school tests which demonstrate the high level of geographic ignorance of American students. Recent instances in Colorado and Florida of such media coverage not only revealed the existence of a large reservoir of public interest, but also generated public support for putting geography in school curriculums (Helgren 1983; Morrow-Jones 1984). Indeed, support for the return or enhancement of geography in basic education has come from rather diverse and unexpected quarters ("Psychologist Views..." 1984; Baker 1984).

(c) Recent instances of actual or planned additions of geography to school programs provide the best testimony to the existing demand. Several can be mentioned. The San Diego Unified School District, California's second largest, decided recently to require history and geography in the 9th and 10th grades, and tested this program in the 1984-84 year ("Geography Required...." 1983; "San Diego..." 1983). In another instance, the College of Arts and Sciences at the University of Colorado (Boulder) has planned to institute, effective the fall of 1987, a new entrance requirement which will include one year of Geography; the ramification of this on high school programs and staffing

is currently under study ("University of Colorado's..." 1983). In post-high school programs, new bachelor programs in Geography have been instituted recently at the U.S. Military Academy, at Vassar College, and at Northern Kentucky University ("1982 Departmental Survey" 1983). At other institutions, for example the University of Connecticut and SUNY Buffalo, new relationships are developing between geography programs and programs in business, planning, and others ("Program Innovations..." 1983). Accreditation policies and standards of the American Assembly of Collegiate Schools of Business (AACSB) state that all business students should acquire an "international dimension" through their curriculum, and geography departments have an opportunity to provide appropriate skills ("Geography and Business..." 1984).

(d) Finally, another reason for optimism about the future growth of Geography is the notable growth in college geography enrollment in the 1960-1980 period (Golledge 1983, 5; Gritzner 1982, 237). Although the peak enrollment occurred in 1972-1973, the general trend compares favorably with the growth in physical and social sciences, especially in college degrees awarded (Golledge 1983, 5).

(ii) <u>The "Science and Technology" Theme</u>.

The "Risk Report" sees the need for education reform mainly in the light of the nation's rising technological demands which are not being met adequately. The Report argues for improved pre-college curriculums and teaching in especially science and mathematics as the principal means for reversing the trend of declining scientific and technological literacy (USNCEE 1983, 10). It is the Report's considerable emphasis on science, mathematics, and technology that has generated in social scientists considerable concern, which I shall address in the next section.

I expect, however, that the math/science emphasis of the "Risk Report" is meeting with general approval by geographers. Although Geography is fundamentally and pervasively a social science, the discipline has an "earth science tradition" (Pattison 1964), and has nurtured the specialty fields of physical geography such as geomorphology, climatology, and biogeography. Research and teaching in these fields are rooted in the positivist philosophy of enquiry and the attendant scientific and mathematical methodologies; indeed, physical geography courses often carry science credit in colleges and universities, and would surely benefit from upgraded pre-college science and mathematics education. To those involved in teaching and research in physical geography, the advocacy of the "Risk Report" must fall on receptive ears. But such receptivity is not at all limited to geographers with a physical or biological science bent. Much of the social science-oriented research and teaching in the many specialty fields of Human Geography, also rests in large measure on the "science and math" philosophy and methodologies (Chorley and Haggett 1967; Harvey 1969; Thomas and Huggett 1980). A recently published collection of short papers on "Scientific Geography," written by geographer-participants at a recent Geography Regional Science Session in Pittsburgh, affirmed and promoted the scientific basis of all Geography (Thrall 1983). The growth of non-positivist, phenomenological perspectives in geographic research in recent years has sparked considerable discussion and debate about the definition, the science "status," and the funding potential of both positivist and phenomenological reasearch (Moriarty 1981; 1982; 1983; Nordstrom 1983; Pickles 1982).

(iii) The "Social Science" Theme.

The "Risk Report's" emphasis on mathematics and science overshadows the Report's recognition that improvement in social science and humanities education is also needed in national education reform. Arts and humanities, the report says, ought to be harnessed to science, and vice versa (USNCEE 1983, 10), and together with social science, is slated for improvement after a start has been made in meeting the "nearly desperate need for increased support for teaching mathematics and science" (USNCEE 1983, 12). The Report's appendices, in which are outlined the Commission's public hearings, commissioned papers, and public events preparatory for the written report, contain little evidence that social scientists were involved or consulted. It is this relative neglect of the social sciences, coupled with recent indications, from other sources, of declining federal funding of social science research (Kirkpatrick 1983), that has prompted a variety of responses from social scientists, including the creation of this panel (Kirkpatrick's paper was recommended reading for the panelists. Quinn and Kanter 1984).

Recent limitations and constraints, or suggestions thereof, on social science research and education reform are of central concern to Geography, and spawned various reactions from the profession and its leadership. One measure of the interest in these matters is the steady stream of published notices, comments, and articles about the state of funding for geographic research and teaching. These reveal an essentially institutionalized monitoring of the funding climate in Washington, D.C., with special attention given to the current status of National Science Foundation (NSF) funding of social science research ("NSF..." 1983; 1984; "Social Science Money..." 1983); to the federal budget's indication of government research support in the social and behavioral sciences (Consortium of Social Science Associations 1983); and to the special

funding requirements of the Geography and Regional Science Program of the NSF (Moriarty 1981; 1982; 1983). Perhaps most indicative is the AAG's membership in the "Task Force on the Social Sciences" together with other social science associations (for example, history, anthropology, political science and others). In its meetings during the fall of 1983, the Task Force sought to "provide joint advocacy for the social sciences and the social studies" for the purpose of promoting and improving social studies in elementary and secondary schools ("Social Science Task Force..." 1984, 12). In what is the most direct reference I have seen to the "Risk Report," the Task Force's first joint statement cautioned against a one-sided, single-goal, approach in educational reform: "Without for a moment denigrating the importance of rigorous training in mathematics and the physical sciences, we assert that a free society is not simply a nation of well-trained technicians" ("Social Science Task Force..." 1984, 12).

Geography has responded in other ways, too. First, in recent years there has been increased collaboration between the AAG and the NCGE; regular meetings of their respective representatives are held to discuss matters of mutual concerns, such as establishing teaching guidelines for teaching geography in secondary schools and making recommendations for state certification requirements for teaching geography ("Minutes AAG Council..." 1983, 24). Second, recent AAG presidents have urged the Association, its officers and members, to take a more visible and aggressive stance in its relationships with educational, governmental, and business agencies; and to develop a clear sense of mission (Adams 1983; Lewis 1983a; 1983b; 1984). The recently published job description for a new executive director of the AAG reflects this charge (Lewis 1983b, iv), as does the work of the ad hoc Committee on Public Information ("Minutes AAG Council..." 1983, 23). To be sure, these actions have not gone without discussion

and debate (Kahn and Vuicich 1984). Third, publications on "Applied Geography," including information and assessments on job opportunities, internships, and preparatory work for geographers, are appearing in increasing numbers in the profession's publications (Marotz 1983; Russell 1983; Salter 1983; Smith and Hiltner 1983; Stutz and Heiges 1983). This to me is indicative of the growing non-academic job market for geographers, and of Geography's growing role in preparing students for today's society. In totality, all of these activities demonstrate Geography's strong advocacy of, and commitment to, social science research and social science education.

Conclusion

My review of Geography's response to the issues and concerns raised by the "Risk Report" indicates that the discipline has seized the opportunity to assess its role and its responsibility in today's world (Morrill 1984), and to prepare for an expanded contribution to the education of our youth. Optimism abounds. There is substance to the view, expressed by both Kirkpatrick and former AAG president Lewis, that the recent challenges to social science research and teaching provide an opportunity for the social sciences to achieve positions of prominence second to none in American education and research (Kirkpatrick 1983, 715-716; Lewis 1983a). Although he spoke for Geography, Lewis' words could apply to all the disciplines represented here today: "Times like these are always unsettling and sometimes downright disagreeable. BUT--and it's an important BUT, such times of change are also times of opportunity.....the next few years can see unprecedented gains for the profession that we all love so deeply" (Lewis 1983a, 1).

NOTES

1. Associate Professor of Geography, Department of Geography and Regional Development, University of Arizona, Tucson, AZ.

2. Dr. Quinn is department chair of Government and Economics; Dr. Kanter is in the department of History and Geography. The panelists were: Dr. Jean Quataert (History, University of Houston at Clear Lake); Dr. Richard Coughlin (Sociology, University of New Mexico); Dr. Kent Olson (Economics, Oklahoma State University); Dr. Robert M. Stein (Political Science, Rice University); and myself. Because of Stein's absence, Dr. Quinn spoke to Political Science's position.

3. In this paper, "Risk Report" and "Report" are the shortened references to A NATION AT RISK.....(USNCEE 1983).

4. The purpose of the NCGE is "to promote and improve the effectiveness of education in geography," and "the JOURNAL OF GEOGRAPHY is dedicated to strengthening the teaching of geography at all levels." (Cited on editor's pages in current issues.)

5. Natoli is Educational Affairs Director of the Association of American Geographers. His paper has a similar focus as my panel presentation, but appeared in print after my presentation; his comments would have been useful for my panel presentation.

6. Whereas these discourses can be taken as indications of Geography's ongoing, active concern for, and involvement in, the national education picture, some geographers see instead a manifestation of a discipline's "image crisis," the belaboring of which, it is argued, produces results of dubious value (Hudson 1984).

7. Also included in the recommendations is, a half year of computer science, and for college-bound students, two years of foreign language (USNCEE 1983, 24).

REFERENCES

Adams, John S. 1983. "Presidential Remarks," AAG NEWSLETTER, 18 (March): 1-2.

Baker, Russell. 1984. "An Ode to Dippy, A Geographer," THE ARIZONA DAILY STAR (March 18): C-2.

Boardman, David. 1983. "Geography in British Schools in the 1980s," JOURNAL OF GEOGRAPHY, 82 (March-April): 64-71.

Boehm, Richard G. 1984. "On Prejudice in Geography," JOURNAL OF GEOGRAPHY, 83 (March-April): 52-53.

Chorley, Richard J. and Peter Haggett, eds. 1967. MODELS IN GEOGRAPHY (London: Methuen and Co., Ltd.).

Consortium of Social Science Associations (COSSA). 1983. "Analysis of 1984 Federal Budget Re. Government Programs of Research Support in Social and Behavioral Sciences." (Memorandum distributed by Pat McWethy, Executive Director of AAG, December.)

de Souza, Anthony R. 1984. "A Crisis in Geographical Education ?," (editorial) JOURNAL OF GEOGRAPHY, 83 (January-February): 3.

"Geography and Business Schools." 1984. AAG NEWSLETTER, 19 (January): 1-2.

"Geography Required in High Schools." 1983. AAG NEWSLETTER, 18 (November): 1-2.

Golledge, Reginald G. 1983. "The Reality of Modern Geography," JOURNAL OF GEOGRAPHY, 82 (January-February): 5-6.

Graves, Norman J., ed. 1982. NEW UNESCO SOURCE BOOK FOR GEOGRAPHY TEACHING (Harlow, England: The UNESCO Press.

Gritzner, Charles F. 1982. "What is Right With Geography ?," JOURNAL OF GEOGRAPHY, 81 (November-December): 237-239.

Guelke, Leonard. 1983. "Scholarship in Geography: An Intellectual Challenge," THE PROFESSIONAL GEOGRAPHER, 35 (August): 336-338.

Harvey, David. 1969. EXPLANATION IN GEOGRAPHY (London: Edward Arnold).

Helgren, David M. 1983. "Place Name Ignorance is National News," JOURNAL OF GEOGRAPHY, 82 (July-August): 176-178.

Hudson, John C. 1984. "Geography's Image Crisis," JOURNAL OF GEOGRAPHY, 83 (May-June): 100-101.

James, Preston E. 1983. "Problems and Opportunities in Geography," JOURNAL OF GEOGRAPHY, 82 (May-June): 92-93.

Khan, S., and G. Vuicich. 1984. "Leadership in Geography: A Response to the President's Open Letter of November 14, 1983," AAG NEWSLETTER, 19 (March): 6, 18.

Kirkpatrick, Samuel A. 1983. "Social Science Research Under Siege: Scarcity or Conspiracy ?," SOCIAL SCIENCE QUARTERLY, 64 (December): 705-717.

Lewis, Peirce F. 1983a. "President's Column: A Call to Action," AAG NEWSLETTER, 18 (December): 1-2.

_____. 1983b. "An Open Letter from the President to Members of the AAG," AAG NEWSLETTER, 18 (December): between pages 10 and 11.

_____. 1984. "President's Column: Geographers and the American Press," AAG NEWSLETTER, 19 (March): 1-2.

Marotz, Glen A. 1983. "Industry-Government-Academic Cooperation: Possible Benefits for Geography," THE PROFESSIONAL GEOGRAPHER, 35 (November): 407-415.

"Minutes, AAG Council Meeting, Denver Hilton Hotel, 22-23 April 1983." 1983. AAG NEWSLETTER, 18 (August): 22-27.

Moriarty, Barry M. 1981. "Future Research Direction in American Human Geography," THE PROFESSIONAL GEOGRAPHER, 33 (November): 484-488.

_____. 1982. "A Geography of Research-Grant Getting in Geography," THE PROFESSIONAL GEOGRAPHER, 34 (August): 322-331.

_____. 1983. "'Science' and the Funding of Geographic Research: The Pursuit of Reliable Knowledge," THE PROFESSIONAL GEOGRAPHER, 35 (August): 332-336.

Morrill, Richard. 1983. "The Nature, Unity and Value of Geography," THE PROFESSIONAL GEOGRAPHER, 35 (February): 1-9.

_____. 1984. "The Responsibility of Geography" (presidential address), ANNALS OF THE ASSOCIATION OF AMERICAN GEOGRAPHERS, 74 (March): 1-8.

Morrow-Jones, Hazel A. 1984. "A Fifth Lesson," JOURNAL OF GEOGRAPHY, 83 (January-February): 4.

Natoli, Salvatore. 1984. "The Invisible Geography Teachers and the Profession," THE PROFESSIONAL GEOGRAPHER, 36 (February): 89-92.

"NSF Science Education Excludes Social Sciences." 1983. AAG NEWSLETTER, 18 (October): 12.

"NSF Science Education Includes Social Sciences." 1984. AAG NEWSLETTER, 19 (March): 7.

"1982 Departmental Survey." 1983. AAG NEWSLETTER, 18 (May): 1, 3, 14.

Nordstrom, Karl W. 1983. "'Science' and the Funding of Physical Geographers," THE PROFESSIONAL GEOGRAPHER, 35 (November): 469-470.

Pattison, William D. 1964. "The Four Traditions of Geography," JOURNAL OF GEOGRAPHY, 63 (May): 211-216.

Pickles, John. 1982. "'Science' and the Funding of Human Geography," THE PROFESSIONAL GEOGRAPHER, 34 (November): 387-392.

"Program Innovations and Change in Geography, pp. 3-13." 1983. AAG NEWSLETTER, 18 (April): 1, 3-13.

"Psychologist Views Geography as a Basic Subject." 1984. AAG NEWSLETTER, 19 (February): 12.

Quinn, Sandra L., and Sanford Kanter. 1983. "The Social Sciences at Risk: Dangers to the Social Sciences in the Rush to Educational Reform." Unpublished Outline for Proposed Panel (October).

_____. 1984. Personal Communiqué to Panelists (February).

Russell, Joseph A. 1983. "Specialty Fields of Applied Geographers," THE PROFESSIONAL GEOGRAPHER, 35 (November): 471-475.

Salter, Christopher J. 1983. "What Can I Do With Geography ?," THE PROFESSIONAL GEOGRAPHER, 35 (August): 266-273.

"San Diego School District Adds Geography." 1983. AAG NEWSLETTER, 18 (December): 1, 3.

Smith, Bruce W., and John Hiltner. 1983. "Where Non-Academic Geographers Are Employed," THE PROFESSIONAL GEOGRAPHER, 35 (May): 210-213.

"Social Science Money Cut at NSF." 1983. AAG NEWSLETTER, 18 (April): 2.

"Social Science Task Force Issues Position Statement." 1984. AAG NEWSLETTER, 19 (March): 12.

Stutz, Frederick, and Harvey E. Heiges. 1983. "Developing Courses in Applied Geography for Transportation Planners," THE PROFESSIONAL GEOGRAPHER, 35 (May): 206-210.

Thomas, R.W., and R.J. Huggett. 1980. MODELLING IN GEOGRAPHY: A MATHEMATICAL APPROACH (Totowa, N.J.: Barnes and Noble Books).

Thrall, Grant I., ed. 1983. "Scientific Geography," THE PITTSBURGH GEOGRAPHY AND REGIONAL SCIENCE SESSIONS NEWSLETTER (Special Issue)(November).

USNCEE (U.S. National Commission on Excellence in Education). 1983. A NATION AT RISK: THE IMPERATIVE FOR EDUCATIONAL REFORM (Washington, D.C.: Government Printing Office).

"University of Colorado's New Admission Requirements To Include Geography." 1983. AAG NEWSLETTER, 18 (December): 1-2.